

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,115,210 B2
APPLICATION NO. : 10/708009
DATED : October 3, 2006
INVENTOR(S) : Calderoni et al.

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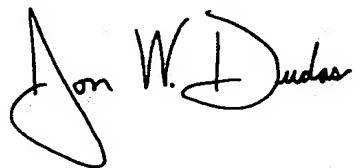
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Delete Title page illustrating figure, and substitute therefor, new Title page illustrating figure. (attached)

Delete drawing figures 1-4, and substitute therefor drawing figures 1-4, as shown on the attached sheets.

Signed and Sealed this

Sixteenth Day of January, 2007



JON W. DUDAS
Director of the United States Patent and Trademark Office

(12) United States Patent
Calderoni et al.(10) Patent No.: US 7,115,210 B2
(45) Date of Patent: Oct. 3, 2006

(54) MEASUREMENT TO DETERMINE PLASMA LEAKAGE

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 132 days.

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H01J 21/302 (2006.01)

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275/B21.528; 438/14; 438/16; 455/118

(58) Field of Classification Search 216/59.
See application file for complete search history.

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Primary Examiner—Nadine Norton

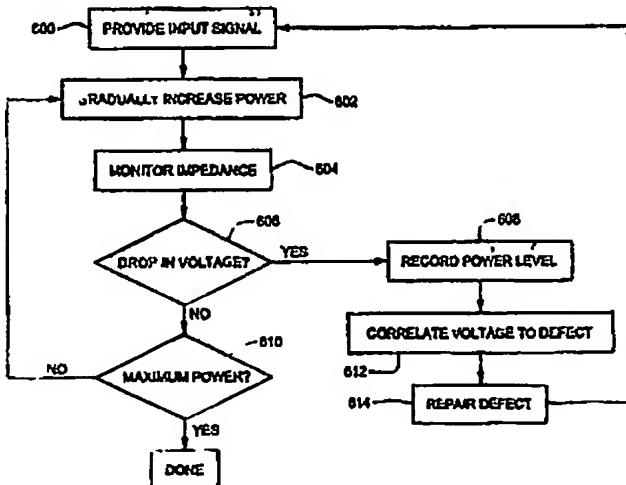
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(57) ABSTRACT

Disclosed is a method and system for detecting abnormal plasma discharge that is useful in, for example, detecting plasma leakage in a reactive ion etching (RIE) chamber. The system includes electrical contacts connected to the chamber that provide an input signal to the chamber. This input signal can be generated by a radio frequency (RF) generator that is connected to the electrical contacts. A variable power controller connected to the RF generator gradually increases (ramps) the power of the input signal being supplied to the chamber.

14 Claims, 4 Drawing Sheets



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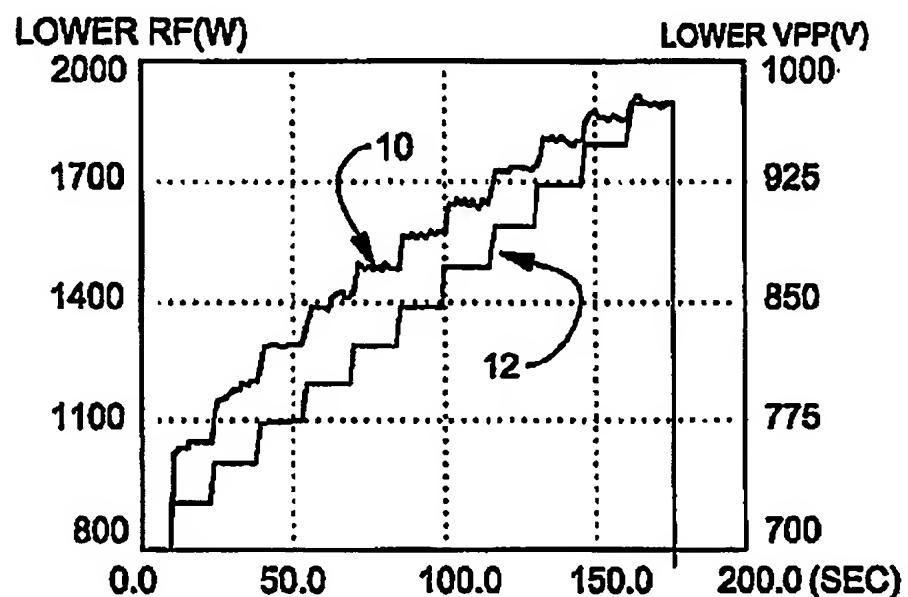


FIG. 1

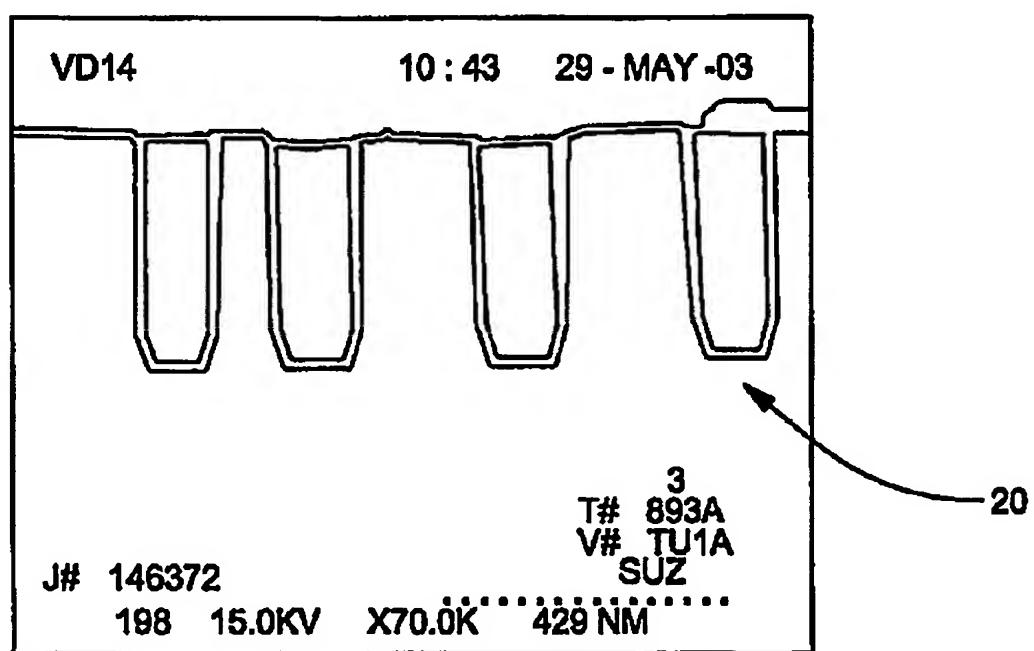


FIG. 2

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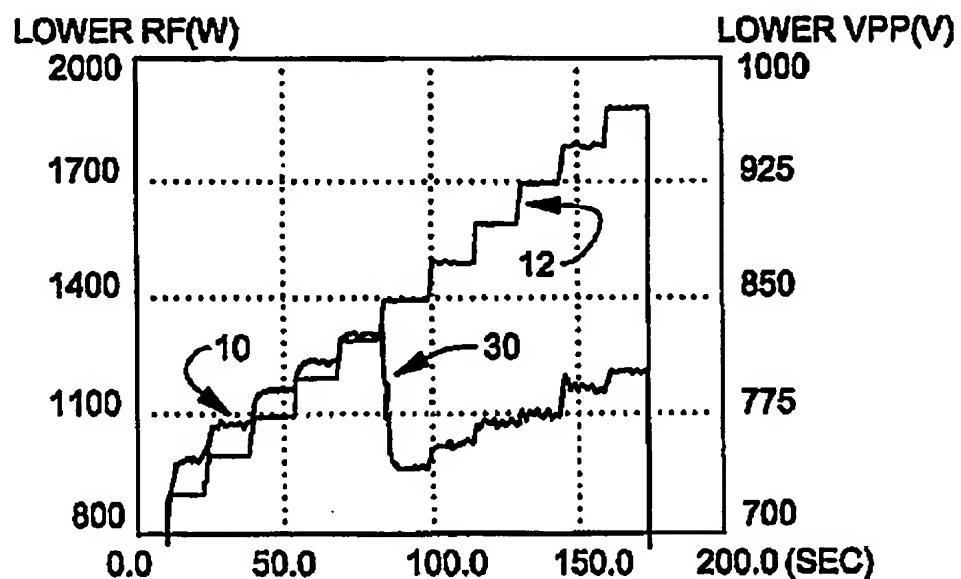


FIG. 3

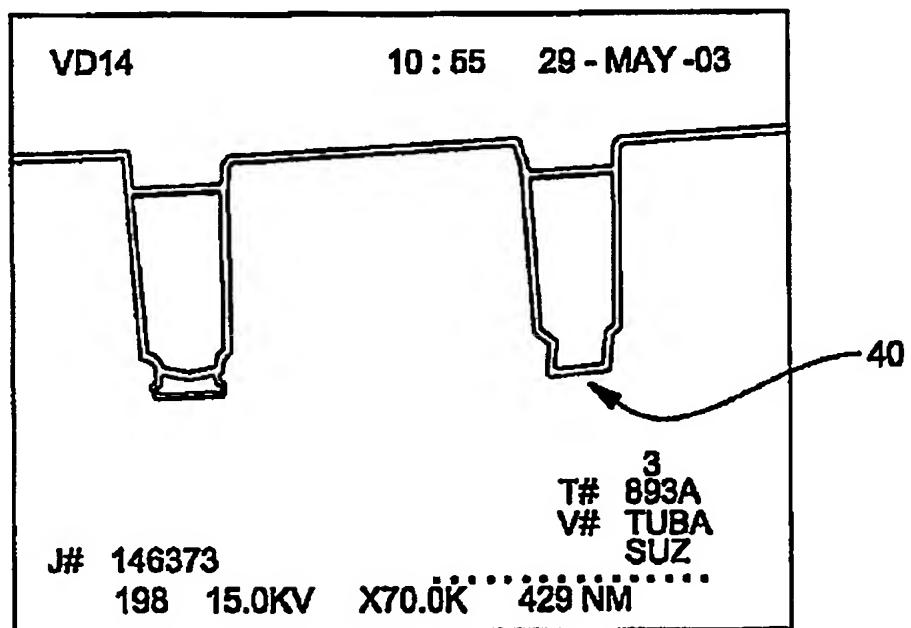


FIG. 4

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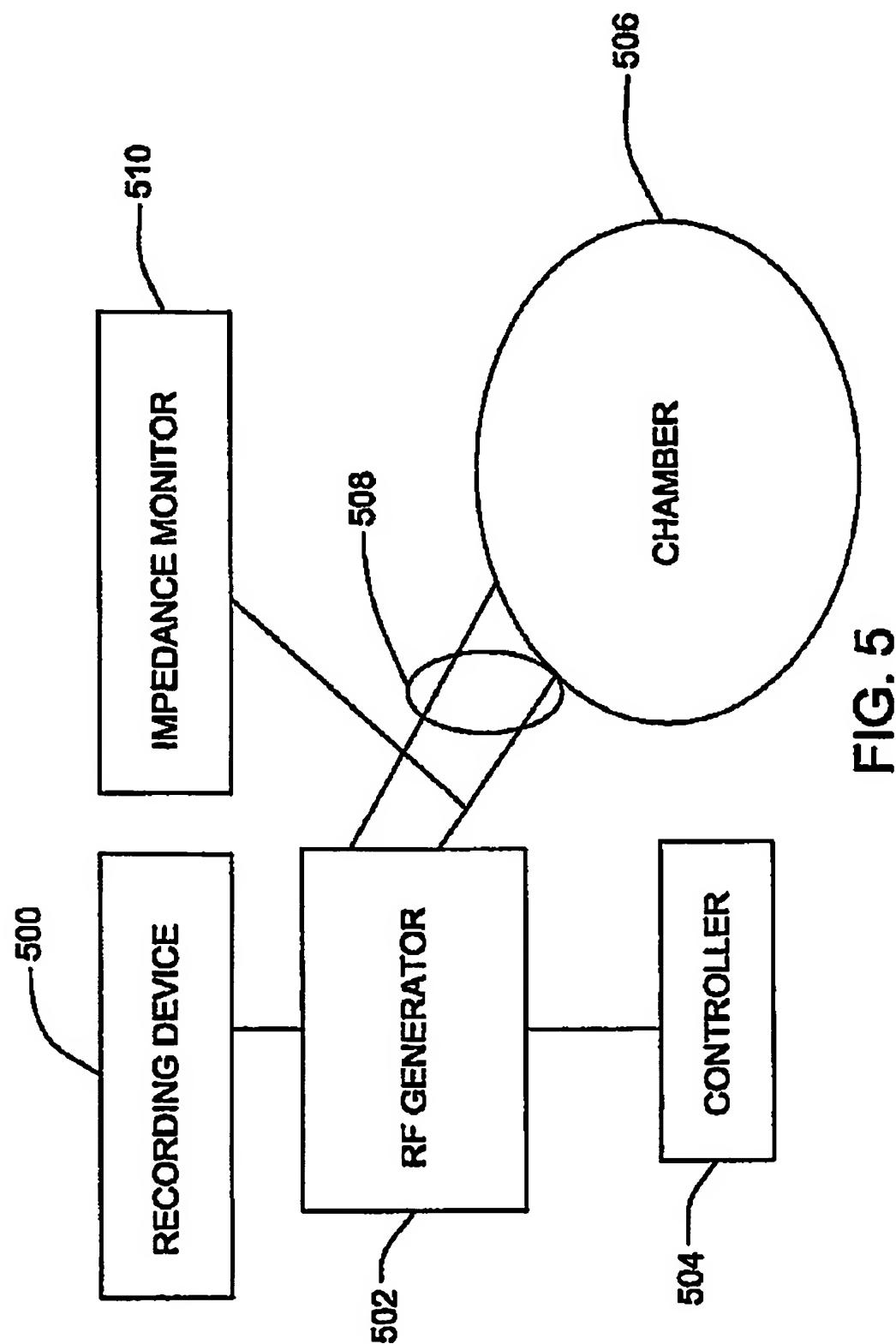


FIG. 5

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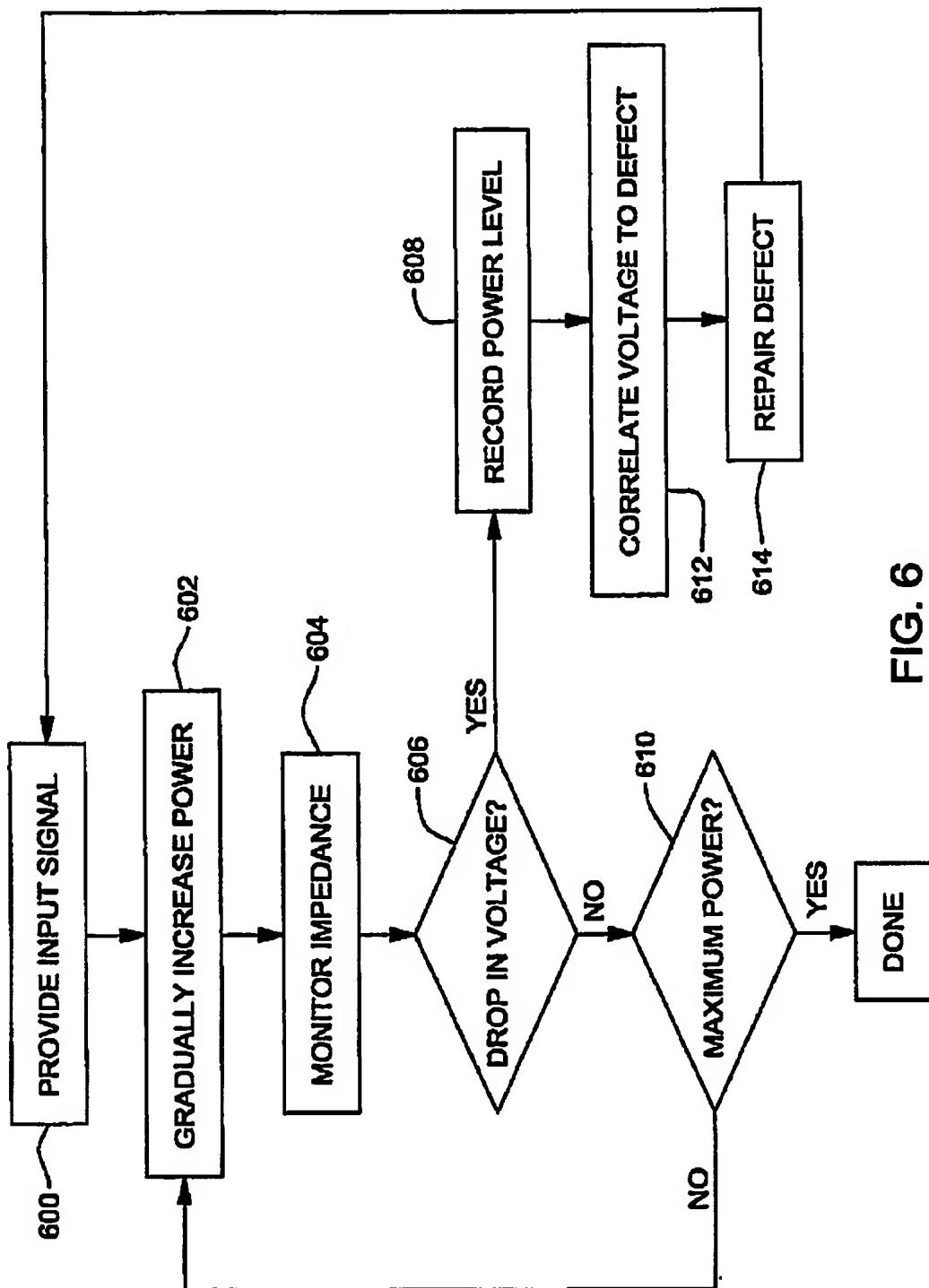


FIG. 6